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| APPLICATION NO.                                                                                      | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|------------------------------------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 09/580,495                                                                                           | 05/30/2000  | Alan Frank Graves    | 71493-750           | 8315             |
| 293                                                                                                  | 7590        | 02/25/2005           |                     | EXAMINER         |
| Ralph A. Dowell of DOWELL & DOWELL P.C.<br>2111 Eisenhower Ave.<br>Suite 406<br>Alexandria, VA 22314 |             |                      | TRAN, DZUNG D       |                  |
|                                                                                                      |             |                      | ART UNIT            | PAPER NUMBER     |
|                                                                                                      |             |                      | 2633                |                  |

DATE MAILED: 02/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                 |               |  |
|------------------------------|-----------------|---------------|--|
| <b>Office Action Summary</b> | Application No. | Applicant(s)  |  |
|                              | 09/580,495      | GRAVES ET AL. |  |
|                              | Examiner        | Art Unit      |  |
|                              | Dzung D Tran    | 2633          |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.                                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-59 is/are pending in the application.
- 4a) Of the above claim(s) 4-14, 17, 18, 25-57 and 59 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-3, 15, 16, 19-24 & 58 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

|                                                                                                                        |                                                                             |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. _____                                                |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|                                                                                                                        | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION*****Specification******Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 15, 16, 19-22 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. U.S. patent no. 6,559,984 in view of Turner et al. U.S. patent no. 6,449,068.

Regarding claims 1, 15, 16, 19-22 and 58, Lee clearly discloses in figure 5, a optical path monitoring with an optical switch (520) providing individual signal paths between a plurality of input ports and a plurality of output ports, said switch having a plurality of wavelength division multiplexers 540 for combining sets of individual switched optical signals into multiplexed switched optical signals (see figure 5), the system comprising:

a plurality of optical couplers (same as splitters) figure 5C, element 536;  
a plurality of optical variable attenuator 535 (same as VOIC) for insertion into respective ones of the individual signal paths and for individually controlling the intensity of optical signals present in said respective ones of the individual signal paths in accordance with respective intensity control signals; and

the feedback controller 538 (same as claimed equalizer) connected to the splitters 536 and to the optical variable attenuator 535, for producing an estimate of the optical power of each individual switched optical signal and generating the intensity control signals as a function of the estimates of optical power (col. 5, lines 37-51). Lee differs from claims 1, 15, 16, 20-22 and 58 of the present invention in that Lee does not specifically discloses the optical variable attenuator is controlled by a controller that connected to an output of a wavelength division multiplexer and to the optical variable attenuator (same as VOIC). Turner, from the same field of endeavor, discloses an optical power detector/controller 22 connected to an output of a wavelength division multiplexer 18 and to the optical variable attenuator 16 (same as VOIC) for equalizing the output power of the switch device 14. At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to include the teaching of Turner in the system of Lee. One of ordinary skill in the art would have been motivated to do this in order to adjust the power level of each narrowband optical signal based upon the detected power level of each plurality of attenuated optical signal so as to equalize the power in each of the plurality of narrowband optical signal.

3. Claims 2, 3, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. U.S. patent no. 6,559,984 in view of Turner et al. U.S. patent no. 6,449,068 and further in view of Taylor et al. U.S. patent no. 6,049,413.

Regarding claims 2 and 23, Lee and Turner do not disclose the equalizer comprises: for each of the optical splitters, a wavelength demultiplexer connected to an output of said splitter, for each wavelength demultiplexer, a plurality of optical receivers connected to said demultiplexer, for each optical receivers, a power estimator connected thereto and a common controller connected to each power estimator; said controller being adapted to read a power estimate from each power estimator and to generate said intensity control signals as a function thereof. Taylor in figure 12, discloses an optical system that include a circuit for power monitoring comprises: a wavelength demultiplexer (1208), for each wavelength demultiplexer, a plurality of optical receivers (1210-1 to 1210-n) connected to said demultiplexer; for each optical receivers, a power estimator (1212-1 to 1212-n) connected thereto and a common controller (1214) connected to each power estimator for controlling the intensity (for example, by controlling the amplifier 1206-1 to 1206-n). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to include the teaching of Taylor in the system of Lee and Turner. One of ordinary skill in the art would have been motivated to do this since power monitoring is well known in the art for adjusting or controlling the signal intensity so that the received powers are substantially equal.

Regarding claims 3 and 24, Taylor further discloses the receivers 1006 coupled to filter 1104 for outputting a narrower bandwidth.

4. Claims 1, 15, 16, 19-22 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art, figure 1 in view of Kosaka et al. U.S. patent no. 5,986,800.

Regarding claims 1, 15, 16, 19-22 and 58, Figure 1 of Prior Art clearly discloses a optical system with an optical switch (150) providing individual signal paths (170, 180) between a plurality of input ports and a plurality of output ports, said switch having a plurality of wavelength division multiplexers 130 for combining sets of individual switched optical signals into multiplexed switched optical signals. Prior Art, figure 1 differs from claims 1, 15, 16, 20-22 and 58 of the present invention in that Prior Art does not specific disclose a switch comprising:

a plurality of optical splitters, each being connectable to an output of a respective one of the wavelength division multiplexers;

a plurality of VOIC for insertion into respective ones of the individual signal paths and for individually controlling the intensity of optical signals present in said respective ones of the individual signal paths in accordance with respective intensity control signals; and

the equalizer connected to the splitters and to the VOIC, for producing an estimate of the optical power of each individual switched optical signal and generating the intensity control signals as a function of the estimates of optical power.

Kosaka, in figure 11, discloses an apparatus for adjusting optical output power at the respective wavelength comprising:

an optical splitters 12, being connectable to an output of the wavelength division multiplexers 19, an optical power controller 14 connected to an output of a wavelength division multiplexer 19 and to the optical gain adjusters 17a, 17b, 17c (same as VOIC) for equalizing the power of each de-multiplexed wavelength. At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to include the teaching of Kosaka in the system of Prior Art. One of ordinary skill in the art would have been motivated to do this in order to adjust the power level of each narrowband optical signal based upon the detected power level of each plurality of attenuated optical signal so as to equalize the power in each of the plurality of narrowband optical signal.

5. Claims 2, 3, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art, figure 1 in view of Kosaka et al. U.S. patent no. 5,986,800 and further in view of Taylor et al. U.S. patent no. 6,049,413.

Regarding claims 2 and 23, Prior Art and Kosaka do not discloses the equalizer comprises: for each of the optical splitters, a wavelength demultiplexer connected to an output of said splitter, for each wavelength demultiplexer, a plurality of optical receivers connected to said demultiplexer, for each optical receivers, a power estimator connected thereto and a common controller connected to each power estimator; said controller being adapted to read a power estimate from each power estimator and to generate said intensity control

signals as a function thereof. Taylor in figure 12, discloses an optical system that include a circuit for power monitoring comprises: a wavelength demultiplexer (1208), for each wavelength demultiplexer, a plurality of optical receivers (1210-1 to 1210-n) connected to said demultiplexer; for each optical receivers, a power estimator (1212-1 to 1212-n) connected thereto and a common controller (1214) connected to each power estimator for controlling the intensity (for example, by controlling the amplifier 1206-1 to 1206-n). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to include the teaching of Taylor in the system of Prior Art and Kosaka. One of ordinary skill in the art would have been motivated to do this since power monitoring is well known in the art for adjusting or controlling the signal intensity so that the received powers are substantially equal.

Regarding claims 3 and 24, Taylor further discloses the receivers 1006 coupled to filter 1104 for outputting a narrower bandwidth.

### ***Response to Arguments***

6. Applicant's arguments filed on 12/01/2004 have been fully considered but they are not persuasive.

**A Rejection of claims 1, 15, 16, 19-22 and 58 under USC § 103 over Lee et al. U.S. patent no. 6,559,984 in view of Turner et al. U.S. patent no. 6,449,068**

Applicant argues that the applicants' date of invention predates Turner's reference by the enclosed Affidavit signed by Alan F. Graves, one of the inventors named in the application but there is no Affidavit signed by Alan F. Graves was submitted. Applicant further argues that Lee reference does not support the rejection of claims 1, 15, 16, 19-22 and 58. However, all the missing limitations applicant argues that Lee reference does not shown is in Turner reference. Therefore, the rejection of claims 1, 15, 16, 19-22 and 58 are still outstanding. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

**B) Rejection of claims 1, 15, 16, 19-22 and 58 under USC § 103 over *Prior Art, figure 1 in view of Kosaka et al. U.S. patent no. 5,986,800.***

Applicant's argues that there is no motivation in the prior art and the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper.

See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Furthermore, Kosaka clearly shown the different limitations of prior art with the claimed invention that is an optical splitters 12, being connectable to an output of the wavelength division multiplexers 19, an optical power controller 14 connected to an output of a wavelength division multiplexer 19 and to the optical gain adjusters 17a, 17b, 17c (same as VOIC) for equalizing the power of each de-multiplexed wavelength. Thus, the rejection of claims 1, 15, 16, 19-22 and 58 are still outstanding.

### *Conclusion*

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung D Tran whose telephone number is (571) 272-3025. The examiner can normally be reached on 9:00 AM - 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dzung Tran  
02/18/2005

*M. R. Sedighian*  
**M. R. SEDIGHIAN**  
**PRIMARY EXAMINER**